

CALIFORNIA DEPARTMENT OF WATER RESOURCES

REPORT OF ACTIVITIES

NOVEMBER 2019

THE PURPOSE OF THIS REPORT...

is to provide a brief update to Central Valley Flood Protection Board (CVFPB) members on California Department of Water Resources (DWR) activities that occurred in the previous month. This report is organized by the five DWR mega-programs:

- Flood Emergency Response
- Flood Management Planning
- Floodplain Risk Management
- Flood Risk Reduction Projects
- Flood System Operations and Maintenance

Only programs with updates for this month have been included in this report. Programs not listed in this month's report may be included in future reports if updates are provided.

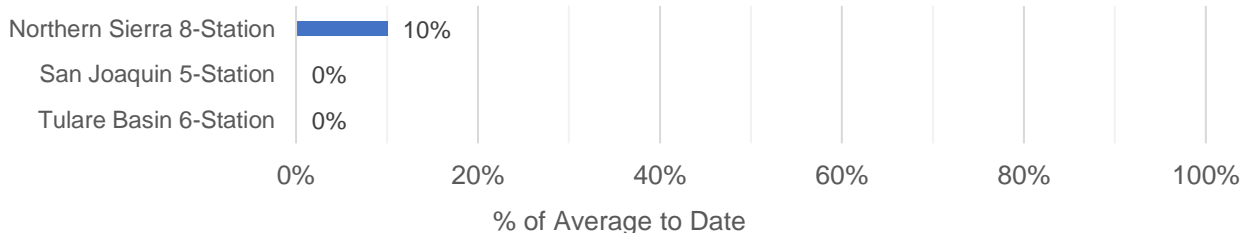
A full list of programs and program descriptions are available upon request. If you have any questions or concerns regarding this report, please call Ricardo Pineda at (916) 574-0632 or email Ricardo.Pineda@water.ca.gov.

FLOOD EMERGENCY RESPONSE (FER)

FER // HYDRO-CLIMATE DATA COLLECTION & PRECIPITATION / RUNOFF FORECASTING

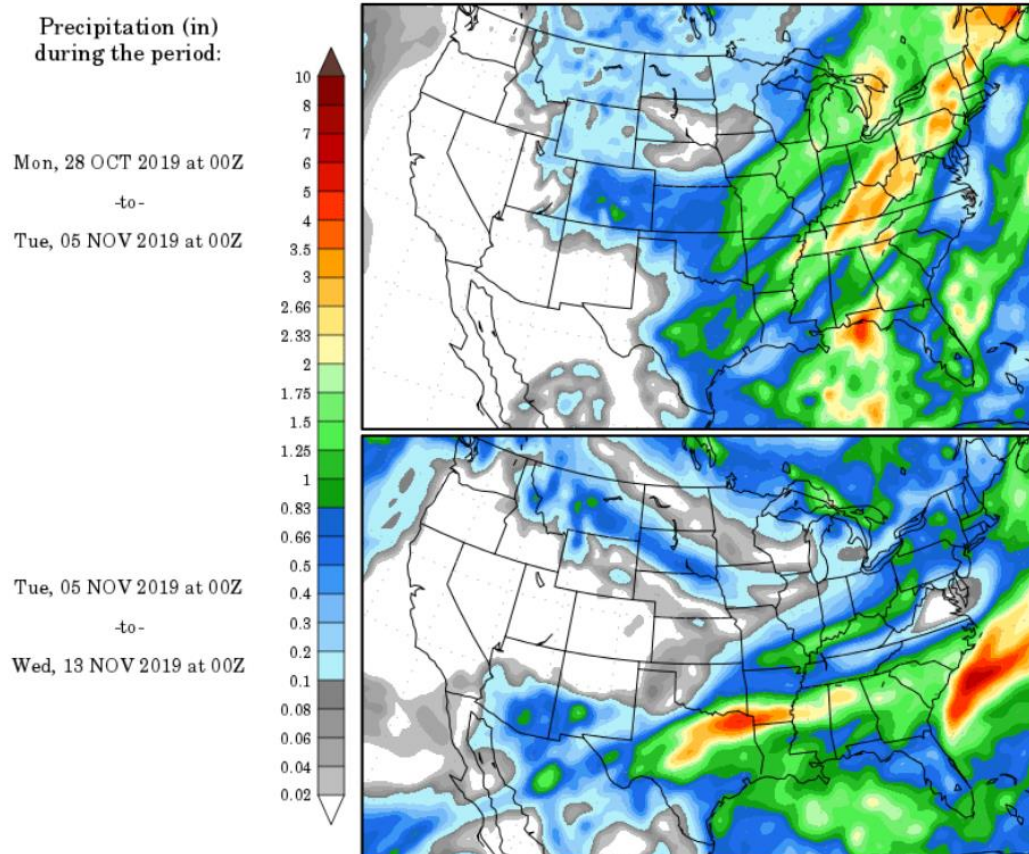
October 1 marked the beginning of a new water year. Northern California experienced 10% of its average precipitation for the month of October. Central and Southern California experienced little to no precipitation. Temperatures were slightly below normal in Northern California, slightly above normal on the Central Coast, and average for the rest of California.

Precipitation Index October 28, 2019

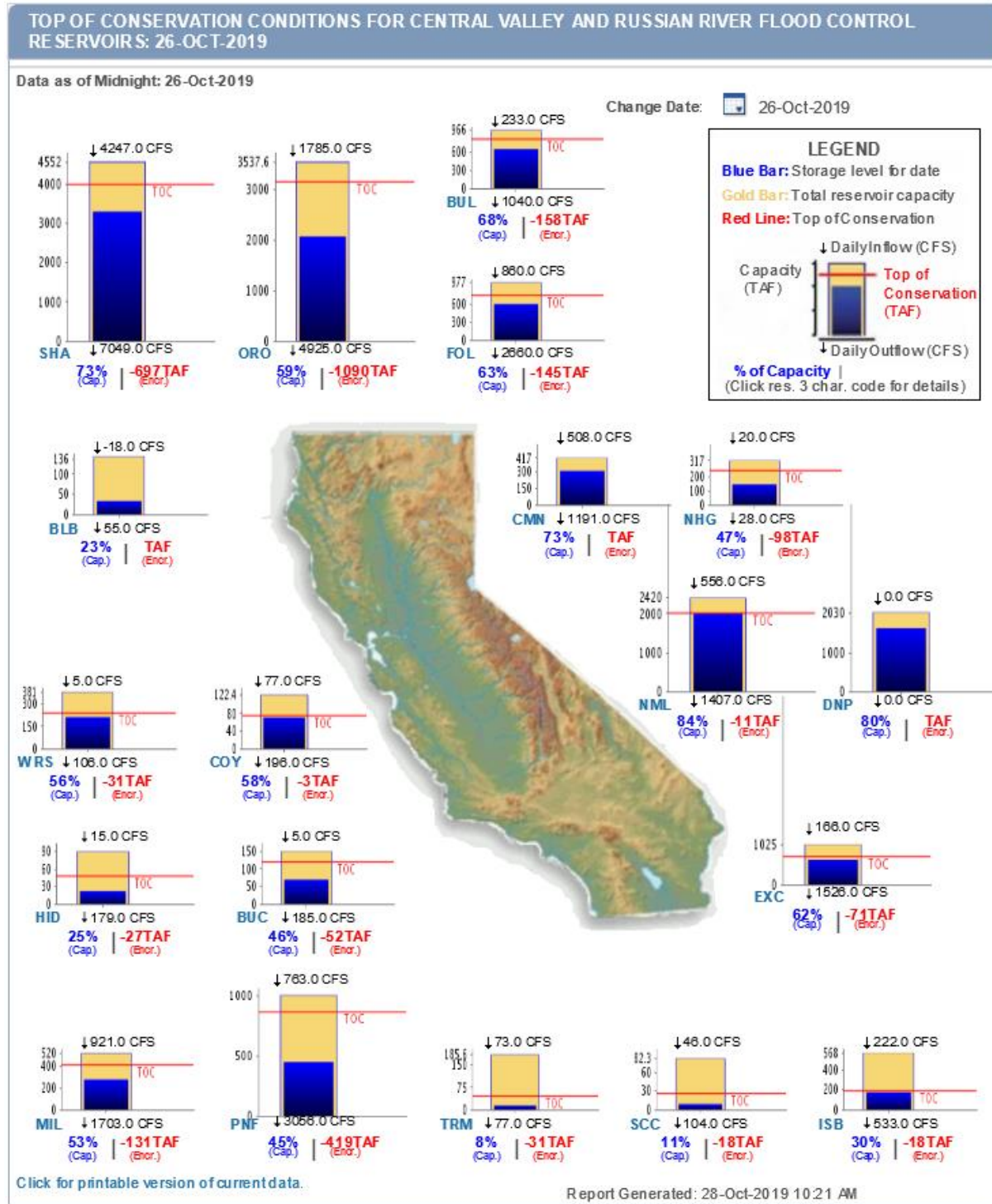


The first and second week of November are expected to bring little to no rain. The two 8-day panel graphics (10/28-11/05 and 11/05-11/13) from the Global Forecast System (GFS) weather model show this result.

Precipitation Forecasts



The graph below shows the storage level, the total reservoir capacity and the top of conservation level for different reservoirs. As of October 26, New Melones Reservoir and Don Pedro Reservoir were above 75% capacity. Black Butte, Terminus Dam, Schafer Dam (formerly Success Dam), and Hidden Dam at Hensley were below 30% capacity. In October, notable flood control releases were made at Keswick, Oroville, Pine Flat, Lake McSwain, and Lake Natoma at Nimbus Dam.



National Weather Service Climate Prediction Center long-range, 1-month precipitation outlook for November 2019 suggests:

- Increased chances of above normal temperatures throughout California.
- Increased chances of below normal precipitation for Northern California and near-normal precipitation for the rest of the state.
- In October, staff produced monthly reports, worked on tools to optimize data collection and entry, developed new forecasting equations, and prepared for the Annual Meeting of the California Cooperative Snow Surveys Program.
- In October, staff assessed, maintained, or upgraded the following telemetered hydrometeorological stations: DWR's Blacks Mountain and Mud Springs in the Pit River Basin; Colgate Power House, Robinson Cow Camp, Bowman Lake, and Allegheny in the Yuba River Basin; Rock Creek Lakes and Cottonwood Lakes in the Owens River Basin; and Devil's Postpile in the San Joaquin River Basin; U.S. Bureau of Reclamation's (Reclamation) Bonanza King in the Trinity River Basin; Bloods Creek, Agnew Pass, Kaiser Point, Chilkoot Meadow, Poison Ridge, Tamarack Summit, Huntington Lake, Nature Point, Goat Mountain, Friant Dam, and Bald Mountain in the San Joaquin River Basin; and Mammoth Pass in the Owens River Basin; as well as Yuba County Water Agency's Bullards Bar and Sunnyside Meadow in the Yuba River Basin.

FER // RESERVOIR OPERATIONS & RIVER FORECASTING

- On October 9, staff attended and presented at Merced Irrigation District's MIDH2O Symposium in Atwater. Topics discussed included data collection, forecasting, and decision support systems.
- On October 16, staff led the San Joaquin Forecast-Coordinated Operations (F-CO) Quarterly Management Team Meeting in Turlock. Topics discussed included F-CO grants, agency updates and activities, exercise planning, and F-CO field work.
- Statewide reservoir storage totaled 26.9 million-acre-feet as of October 1, 2019.
 - 124 percent of average to date.
 - 71 percent of capacity for this time of year.
- In November, the California Nevada River Forecast Center and DWR will be releasing weekday afternoon forecasts, likely based on forecast conditions, beginning Wednesday, November 6, and will continue through the flood season.

FER // FLOOD EMERGENCY PREPAREDNESS & OPERATIONS

- On October 1, Flood Operations Branch (FOB) staff coordinated materials with U.S. Army Corps of Engineers (USACE) for a USACE Flood Fight Coordination Seminar.
- On October 17, FOB staff conducted Flood Emergency Response Roster Kick-off meetings for three Flood Operations Center (FOC) rosters. Topics included a brief recap of the February 2019 activation, FOC roles and responsibilities, activation procedures, and training on completing timesheets and activity logs.
- A Flood Preparedness Week press conference was held October 24 at the Stockton Emergency Materials Transfer Facility, emphasizing relationships and communication as key factors in flood preparedness. The event hosted speakers including Jeremy Arrich, Division Chief, and speakers from USACE, San Joaquin County, and the public. The speeches were broadcast through Facebook live under the DWR Facebook page, with additional footage on news stations throughout that week.

FER // REAL-TIME FLOOD CONDITIONS, STATUS, & WARNING

- In October, Local Maintaining Agency Assessment Section staff completed 210 pipe inspections for the Utility Crossing Inspection Program with a total of 1,052 inspections completed so far in 2019.
- Per the 2019 LMA Annual Reporting program, 88 out of 105 representing areas have submitted their reports so far. This is 84% complete.
- Flood Project Inspection Section (FPIS) staff closed 61 CVFPB permits in the month of October, closing a total of 1,088 permits so far for 2019.
- FPIS inspectors completed 505 miles of Fall Levee Inspections for a total of 721 miles.
- On October 7, FPIS staff participated in the USACE/CVFPB Coordination Meeting. Inspection staff attended Pre-Season Flood Coordination Meetings on October 2nd, 3rd, 8th, 9th, 16th, and 29th at the following locations respectively: Orland, Redding, Ventura, San Bernardino, Stockton, and Yuba City.

FLOODPLAIN RISK MANAGEMENT (FRM)**FRM // FLOODPLAIN MANAGEMENT ASSISTANCE**

- Oct 15, staff participated in a West Sacramento School Flood preparedness event.
- Oct 19, staff participated in the City of Sacramento Highwater Jamboree flood preparedness event.
- Oct 22, staff hosted a Watershed University Webinar on Headwaters to Floodplains, with over 125 participants.
- Oct 24, staff hosted CA Flood Preparedness Week event at Stockton Rock Yard.
- Oct 25, staff hosted a flood preparedness exhibit at the October CVFPB Meeting.

FLOOD RISK REDUCTION PROJECTS (FRRP)**FRRP // DELTA LEVEE SYSTEM INTEGRITY (DLSI)****Delta Levees Maintenance Subventions Program**

- **Subventions Program FY 2016-17**
 - 67 final claims received.
 - 63 final claims for \$8.4 million have been processed for reimbursement.
- **Subventions Program FY 2017-18**
 - CVFPB approved \$14.5 million for the FY 2017-18 Funding Plan.
 - 71 final claims received.
 - 64 final claims for \$11.1 million are being processed for reimbursement.
- **Subventions Program FY 2018-19**
 - 72 applications for \$54 million were received and reviewed.
 - The CVFPB approved \$12 million for the FY 2018-19 Funding Plan.
 - 72 work agreements executed.
 - Final claims due November 1, 2019.

- **Subventions Program FY 2019-20**
 - 72 applications for \$54 million were received and reviewed.
 - The CVFPB approved \$10 million for the FY 2019-20 Funding Plan.

FRRP // USACE/CVFPB PROJECTS

American River Watershed Project – Natomas Basin

Beginning October 14th, Garden Highway was closed from east of Natomas Park Drive to the intersection of Northgate Blvd. Detour signage was placed, alerting drivers to the new route, and will remain into December.

American River Watershed Project – WRDA 2016

- **Seepage Stability, and Overtopping**
 - First construction activity, as part of the seepage and stability work, started the last week of September; and, it includes construction of approximately 450 feet of seepage berm along the Sacramento River East levee in the vicinity of Front Street in Sacramento. Construction completion is anticipated by late December 2019.
 - Sacramento River East Levee (SREL) project completed the CEQA certification this month. Contract 1 Construction is scheduled to begin February 2020. Prior to that, a tree cutting contract will begin in December this year.
 - SREL Contract 2 Design Contract is awarded to GEI
- **Erosion**
 - American River Contract 1 (Sub-Reach 2) is in 65% design review. 90% design is scheduled for March 2020.
 - American River Contract 2 (Sub-Reaches 1,3, & 4) 10% design concepts is scheduled for review in December 2019.
 - Sacramento River erosion assessment was completed in September. Preliminary report/summary drafted and sent to USACE for 10% design package, which is scheduled for March 2020.
- **Sacramento Weir & Bypass**
 - 65% design is scheduled to be completed February 2020.
- **Mitigation:**
 - Beach Stone Lakes Mitigation Site Project construction is underway. This will be the first mitigation site established to compensate for tree impacts resulting from the ARCF 2016 Project.

Folsom Dam Modifications Joint Federal Project

- Thrust Washer Gap Covers construction contract has been completed.

Folsom Dam Raise Project

- Wing Dams - 35% plan set has completed the Non-Federal Sponsors and Reclamation review.
- Dike 7 - 65% plan set is at Reclamation for Qualitative Risk Analysis review.
- Contract for non-linear modeling of Main Dam Spillway design is underway.

San Joaquin River Basin, Lower San Joaquin River California Project

- USACE is developing the scope of work to outsource the design of the first increment of construction. USACE anticipates that the design contract will be awarded at the end of December.
- The first draft of the Project Management Plan has been sent out for review.

FRRP // URBAN FLOOD RISK REDUCTION PROGRAM (UFRR)**Reclamation District 17 (RD-17) – 100-Year Levee Seepage Area Project (EIP)**

- Construction for the final Phase 3 work began the week of October 23.

San Joaquin Area Flood Control Agency – Smith Canal Closure Structure Project (EIP & UFRR)

- Test piling placement for the project will start on October 28 and finish on October 31.

FLOOD SYSTEM OPERATIONS & MAINTENANCE (FSO&M)

Flood Maintenance Office (FMO) is responsible for two areas of State Plan of Flood Control (SPFC) facilities, State Maintained Areas (SMAs), which are authorized by CWC Section 8361, and ten Maintenance Areas (MAs), which are described in CWC Section 12878. SMAs are funded by state general fund, while MAs are on reimbursable accounts funded by property owners protected by the MA levees and facilities.

State Maintained Areas (SMAs)

- Levees: ~145 miles
- Channels: ~1,200 miles
- Flood Structures: ~30 (11 weirs, 5 gate structures, 4 pumping plants, crossing bridges, etc.)
- Collecting Canals: ~60 miles

Maintenance Areas (MAs)

Currently, FMO maintains ten MAs: MA01, 03, 04, 05, 07, 09, 12, 13, 16, and 17.

- Levees: ~150 miles
- Structures: ~1 pumping plant and 1 diversion weir

OPERATIONS & MAINTENANCE (O&M)

Listed activities are mandated by O&M manuals for facilities in SMAs or MAs. This work is performed by two maintenance yards located in West Sacramento and Sutter with technical and environmental support from JOC.

- Levee and channel vegetation management
- Access road and levee crown maintenance
- Debris and obstruction removal

- *Rodent abatement*
- *Rodent damage repair*
- *Levee erosion repair*
- *Channel scour repair*
- *Minor sediment removal*
- *Pumping plant, weir, outfall gates, and bridge operation, maintenance, and repair*
- *Pipe/Culvert repair*

FMO has implemented the Flood Maintenance Assistance Program (FMAP) with annual funding to increase the level of maintenance in SMAs and support Local Maintaining Agencies (LMAs) and MAs.

State Maintained Areas (SMA) Activities

Sacramento Yard

- Cache Creek Levees: 0.5 mile of vegetation masticating (complete).
- Cache Creek Levees: 22 miles of vegetation spot spraying (complete).
- Cache Creek Levees: Encroachment removal (in progress).
- Cache Creek Levees: 10 cubic yard excavation and backfill of a rodent hole (complete).
- Cache Creek Levees: 2 miles of vegetation mowing (complete).
- Cache Creek Settling Basin Channel: 30 acres of vegetation mowing (complete).
- Fremont Weir Channel: Vegetation mowing (in progress).
- Putah Creek Channel: Scour repair (in progress).
- Sacramento Bypass Channel: Vegetation mowing (complete).
- Sacramento Bypass Channel: 50 acres of vegetation bulldozing (complete).
- Sacramento Bypass Levees: Erosion repair (complete).
- Willow Slough Bypass Channel: Dry sediment removal (complete).
- Willow Slough Bypass levee: Vegetation spot spraying (in progress).
- Yolo Bypass Channel: Vegetation mowing (complete).
- Yolo Bypass Union Pacific Crossing: Vegetation mowing (complete).

Sutter Yard

- Butte Creek Channel: Vegetation mowing (in progress).
- Colusa Bypass Levees: 35 acres of vegetation mowing (complete).
- Colusa Bypass Levees: 6.47 miles of road grading and minor repairs (complete).
- Colusa Bypass Weir: Debris, sediment, and vegetation removal (complete).
- East Levee Sacramento River: Rodent depredation (in progress).
- East Levee Sutter Bypass: Rodent depredation (in progress).
- Tisdale Bypass Channel: Debris removal (in progress).
- Tisdale Bypass Channel: Scour repair (in progress).

Maintenance Area (MA) Activities

MA01

- 17 miles of vegetation spot spraying (complete).

MA05

- Rodent depredation (in progress).
- 30.14 miles of vegetation dragging (complete).
- 0.9 miles of vegetation burning (complete).

MA07

- 12.07 miles of vegetation mowing (complete).

MA09

- 21.3 acres vegetation cutting and limbing (in progress).
- 9.61 miles of rodent hole grouting (in progress).

MA12

- 17.6 miles of road grading and minor repairs (complete).

MA13

- 36.65 miles of vegetation dragging (complete).

MA16

- Vegetation mowing (complete).

MA17

- Gates repaired or replaced (complete).
- Pipe inspection (complete).

Flood Maintenance Assistance Program (FMAP) (provided by FPO/FSSB)

- 49 FMAP applications have been accepted for FY 18/19.
- Advances for FY 18/19 FMAP participants are currently being distributed.
- Total commitment for FY 19/20 is approximately \$8.2M.
- To date, 41 LMAs have submitted packages for FY 19/20.
- DWR is processing fund allocations and anticipates completion by November 2019.

STUDIES & EVALUATIONS

Activities related to evaluating all SPFC facilities to identify any deficiencies, and prioritizing (emergency, critical, serious, monitor) them for repair, rehabilitation, or replacement. These evaluations include:

- *Levee stability*
- *Levee penetrations, such as pipes and culverts*
- *Channel capacity*
- *Structure functionality*
- *Levee Tree Assessment*
- *Encroachments*
- *O&M right-of-way*

Channel Evaluation*Cache Creek Channel Evaluation*

- The HEC-RAS 1D/2D model is being calibrated.

Levee Evaluation*Pipe/Culvert Evaluation*

- Phase 1 video inspections:
 - 162 of 253 pipes passing through SMA levees have been video inspected by FMO.

Levee Tree Assessment

- MA05 tree assessment has begun.
- MA09 tree assessment is on-going.

Encroachments

- FMO continues to coordinate with Hydrology and Flood Operations Office, California Data Exchange Center, Flood Projects Office, and CVFPB to prepare a comprehensive list of encroachments in the SMAs and MAs.

DEFERRED MAINTENANCE

Maintenance that has not been completed to keep the facilities in an acceptable and operable condition will result in deferred maintenance. If the work is not completed as part of O&M activities, it will lead to a larger maintenance issue and cost significantly more.

2017 Emergency Rehab (provided by FPO/FSSB)

- All 39 critical sites identified for state-led repair resulting from the 2017 Storm Events have been completed. Finalization of real estate and mitigation work is anticipated to be complete by 2020.

Levee Rehab (provided by FPO/FSSB)*Flood System Repair Program (FSRP)*

- At this time, DWR has committed all available bond funding for FSRP use. LMA outreach and field reconnaissance, to identify and prioritize eligible repairs for future consideration, will continue if additional funding becomes available. DWR continues managing existing FSRP executed contracts to ensure Prop 1E liquidation is complete.

Storm Damage DWR Rehabilitation (SDDR), Phases 4 and 5

- This effort continues the site repair work that started with the 2017 Emergency Rehabilitation work. Now that all the identified critical sites have been completed (Phases I, II and III), serious sites repair work continues. Phase IV and V construction of approximately 27 sites is scheduled for fall 2020 construction. Staff continues to work on environmental compliance and permitting documents for these sites.

Pipe Rehabilitation

- A total of 66 pipes have been rehabilitated using the Cured In Place Pipe (CIPP) method in SMAs, including:
 - Rehabilitation of 37 pipes completed in Willow Slough, Putah Creek, and West Levee Yolo Bypass. New flood control gates have been installed.
 - Thirteen pipes have been lined along Butte Creek and new gates were installed on two of these pipes. Additional gates have been ordered for the remaining rehabilitated pipes.
 - Sixteen pipes have been lined along Cherokee Canal and new gates were installed on seven of these rehabilitated pipes.
- Work was completed for the Willow Slough Culvert Replacement on October 19, 2019. This high priority project removed and replaced a failed culvert located below County Road 28H, which is used to access the Yolo County Landfill. The roadway was closed for five days to complete the work and was reopened on October 19, 2019.

Channel Rehabilitation*Elder Creek Channel Rehab*

- This past summer, the Sutter Maintenance Yard did not perform sediment removal due to water remaining in the channel from late spring rains. The Yard performed minor site grading, enhanced the haul route from Elder Creek to the spoil site, and masticated underbrush throughout the channel. Sediment removal will resume in the summer of 2020.
- Approximately 70,000 cubic yards of sediment have been removed from Elder Creek to date. We are anticipating another approximately 60,000 cubic yards of sediment remaining in the channel to be removed over the next two summers.

Tisdale Bypass Sediment Removal 2020

- DOE's contractor has completed the LiDAR survey in the Bypass and the spoils site and will expect to deliver the processed survey data by mid-November. Spoil site boundary has been revised to exclude area within the north levee prism. ESA is updating the draft Initial Study/Mitigated Negative Declaration with the revised boundary information.

Structural Rehabilitation*Butte Slough Outfall Gate Rehabilitation*

- FMO staff with consultant support have been working on CEQA, NEPA, and Biological Assessment documents while conducting updated surveys and preparing various environmental permit applications for the work.
- DWR's goal is to contract the rehabilitation work in Summer 2021.
- The design team has been reorganized and a kickoff meeting was held with DOE, Division of Operations and Maintenance, and FMO staff. Project design plans for the rehabilitation work are being updated by DOE, O&M, and FMO.

Tisdale Weir Rehabilitation and Fish Passage Project

- DWR is preparing a CEQA Environmental Impact Report (EIR). Public review of the CEQA document is anticipated in January 2020.
- Environmental analysis document preparation is nearly complete with Technical Memos consolidating analysis of Sediment Deposition, Hydrologic and Hydraulic Flood Impacts, Fish Passage Analysis, Large Wood Debris, and a Long-Term Management Plan for Operations and Maintenance for the updated facility. These documents will support the EIR as well as further engineering design.
- A draft Engineering Basis of Design report with permitting plan set has been completed to further the progress of the environmental permitting and will be used in the process for obtaining USACE Section 408 approval and a CVFPB permit.
- DOE and O&M have provided draft resource agreements and additional planning is underway to update the schedule and agree on milestone dates.

Knights Landing Outfall Gates Fish Barrier

- DWR is completing the agreement to fund Reclamation District (RD) 108 to implement the design and construction of the new fish barrier. The agreement is currently being reviewed by DWR legal.
- Construction is expected in Summer 2020.

CC-2 and CC-4 Bridge Replacements

- Sutter Yard staff have completed pouring the bridge abutments at both bridges and are awaiting the delivery of the steel beams which are being cambered in Stockton, California. Upon receipt of the beams, the Yard will complete additional required welding in their shop, and then commence erecting the bridge. California Department of Fish and Wildlife has granted an extension until November 15, 2019, to continue with the work, but may be willing to extend an additional two weeks, pending weather conditions.

Yard Rehabilitation*Sacramento Yard Improvements*

- Contract work is substantially complete. Change orders have been issued to the contractor to stripe the parking lot and to install a new slide gate. That work is expected to be completed in November 2019.
- Phase 2 planning work has started. DOE is reviewing electrical and safety studies completed and will provide a priority-based approach to the electrical upgrades.

ENVIRONMENTAL INITIATIVES

Environment coordination, advance mitigation, and other holistic measures to expedite our project delivery. FMO is looking to find long-term solutions that will allow more effective and efficient O&M by identifying and implementing environmental measures as part of the system.

O&M Habitat Conservation Plan (HCP)

DWR is reviewing permitting pathways on a landscape scale for coverage of DWR flood maintenance activities.

FEDERAL PROGRAM

FMO's interaction with federal agencies, mainly USACE, in rehabilitation of deferred maintenance projects.

Federal Public Law 84-99 Emergency Repair Project (PL 84-99) (provided by FPO/FSSB)

- A total of 44 sites have been accepted by USACE for rehabilitation as part of the 2017 PL 84-99 Request for Storm Damages. To date, 25 of these sites have been repaired with the remaining 19 scheduled for construction by the end of 2020.
- 51 sites were submitted by LMAs after the 2019 Public Notice and that USACE determined 5 of those to be eligible for PL 84-99 rehabilitation assistance.